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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,781	03/15/2004	Kiyoshi Tatsuhara	2004-0334A	8634

513 7590 09/27/2006

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EXAMINER	
HOPKINS, ROBERT A	

ART UNIT	PAPER NUMBER
1724	

DATE MAILED: 09/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/799,781	TATSUHARA ET AL.	
	Examiner	Art Unit	
	Robert A. Hopkins	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15,16,18,20,21,23-25 and 27-30* is/are rejected.

7)☒ Claim(s) *17,19,22 and 26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15,16,18,20,24,25 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shvarev et al(6391185).

Shvarev et al teaches a method of regenerating an activated carbon fiber(column 3 lines 42-44) having mercury adsorbed thereon, comprising applying a voltage between a first electrode made from used activated carbon fiber in which mercury is adsorbed and a second electrode, acting as a counter electrode to the first electrode, so as to elute the mercury from the first electrode in an ionic state, in an electrolyte(20). Shvarev et al further teaches wherein the first electrode is used as an anode. Shvarev et al teaches wherein the electrolyte includes a material selected from the group consisting of sodium chloride, potassium chloride, and sodium carbonate. Shvarev et al teaches wherein the mercury is desorbed from the used activated carbon fiber while one of oxygen and hydrogen is generated by the applying.

Claims 27-30 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shvarev et al(6391185).

Shvarev et al teaches an apparatus for regenerating an activated carbon fiber having mercury thereon comprising an electrolytic cell having an electrolyte(20) therein,

an electrode unit comprising a first electrode made from used activated carbon in which mercury is adsorbed and a second electrode forming a counter electrode to the first electrode, the first electrode and second electrode being disposed in the electrolyte, and a power source(22) operable to supply a voltage to be applied between the first electrode and the second electrode. Shvarev et al further teaches wherein the first electrode is a cathode.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shvarev et al(6391185) taken together with Waite et al(2004/0020790).

Shvarev et al teaches all of the limitations of claim 21 but is silent as to wherein the applying comprises sweeping the voltage in a range from a positive voltage to a negative voltage. Waite teaches a method of regenerating an electrode of an electrolytic cell by applying a sweeping voltage across the electrodes within the cell. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a step of sweeping the voltage in a range from a positive voltage to a negative voltage to increase the active surface area of the adsorbent electrode of Shvarev et al.

Allowable Subject Matter

Claims 17,19,22, and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 17,19, and 22 recite "wherein the electrolyte is sulfuric acid". Shvarev et al fails to teach an electrolyte which is sulfuric acid. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide an electrolyte which is sulfuric acid because Shvarev et al does not suggest such a modification.

Claim 26 recites "wherein the mercury desorbed from the used activated carbon fiber is precipitated by an inverse reaction on said second electrode so as to recover the mercury". Shvarev et al fails to teach mercury desorbed from used activated carbon fiber is precipitated by an inverse reaction. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a step of mercury desorbed from used activated carbon fiber is precipitated by an inverse reaction because Shvarev et al does not suggest such a modification.

Response to Arguments

Applicant's arguments filed 9-14-06 have been fully considered but they are not persuasive.

Applicant argues Shvarev et al never discloses or suggests mercury which has been adsorbed by activated carbon fiber. Applicant notes Shvarev in column 3 references nonpolar and polar organic compounds and heavy metal ions, and further argues the description of a "heavy metal" nor "copper" anticipates or renders obvious

the claimed species of mercury. Applicant further argues it is improper to reject the claimed species over the disclosure of the genus.

Examiner respectfully submits that the genus "heavy metal" has a very limited and well known subset or species associated with "heavy metal". Examiner respectfully submits that mercury and other heavy metals are all readily adsorbent by activated carbon, therefore there are no unexpected results in adsorption when changing between different species in the genus. Examiner furthermore notes that on page 5 of the current specification, both mercury and selenium are listed as "heavy metal" and the activated carbon fiber is regenerated by the same process to release mercury and selenium into the electrolyte, therefore there are no unexpected results from moving from one species to another within the genus "heavy metal". Therefore, someone of ordinary skill in the art, reading the term "heavy metal" , would have a clear idea of which species, such as mercury, is encompassed by "heavy metal", and also would know that all the species react in the same manner when the activated carbon electrode is regenerated. Therefore, examiner respectfully submits the claims are anticipated by Shvarev et al.

Examiner furthermore notes that, with respect to claim 27, the statement that mercury is adsorbed is an intended use for the apparatus, and because the structural elements of the apparatus are clearly anticipated by Shvarev et al, then the intended use(mercury adsorption and desorption) is not given patentable weight.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

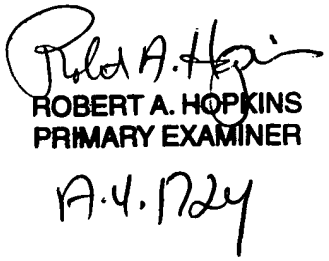
ROBERT A. ROBERTS
PRIMARY EXAMINER

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Thursday, 7:30am-5pm, every Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rah
September 21, 2006



ROBERT A. HOPKINS
PRIMARY EXAMINER

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